In the Claims:

1. (Amended) An electro-optical glazing structure having total-reflection and transparent modes of operation for selectively reflecting and transmitting electromagnetic radiation without absorption, respectively, said electro-optical glazing structure comprising:

an electro-optical panel of laminated construction, having first and second optical states of operation; and

optical state switching means for switching said electro-optical panel to said first optical state of operation in order to induce said electro-optical glazing into said total-reflection mode of operation, and for switching said electro-optical panel to said second optical state of operation in order to induce said electro-optical glazing into said transmission mode of operation,

wherein electromagnetic radiation within a first prespecified bandwidth falling incident upon said electro-optical panel is totally reflected from said electro-optical panel without absorption when said electro-optical panel is switched to said first optical state of operation, and

wherein electromagnetic radiation within a second prespecified bandwidth falling incident upon said electro-optical panel is transmitted through said electro-optical panel without absorption when said electro-optical panel is switched to said second optical state of operation.

2. -35. (Canceled)

36. (New) The electro-optical glazing structure of claim 1, wherein said first prespecified bandwidth comprises the infrared (IR) portion and ultra-violet (UV) portions of the electromagnetic spectrum, and said second prespecified bandwidth comprises said IR portion, said UV portion and the visible portion of the electromagnetic spectrum.

37. (New) The electro-optical glazing structure of claim 1, wherein said electro-optical panel comprises:

a first electrically-passive cholesteric liquid crystal (CLC) electromagnetic radiation polarizing panel;

a second electrically-passive CLC electromagnetic radiation polarizing panel; and

an electrically-active π-phase retardation panel interposed between said first and second electrically-passive CLC electromagnetic radiation polarizing panels.

38. (New) The electro-optical glazing structure of claim 37,

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels totally reflect without absorption electromagnetic radiation having a left hand circularly polarized (LHCP) state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation,

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either a right hand circularly polarized (RHCP) state and/or a wavelength outside said first

prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation; and

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either said LHCP state or said RHCP state and a wavelength within said second prespecified bandwidth when said electro-optical panel is switched to said second optical state of operation.

39. (New) The electro-optical glazing structure of claim 37,

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels totally reflect without absorption electromagnetic radiation having a right hand circularly polarized (RHCP) state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation,

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either a left hand circularly polarized (LHCP) state and/or a wavelength outside said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation; and

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either said LHCP state or said RHCP state and a wavelength within said second prespecified

bandwidth when said electro-optical panel is switched to said second optical state of operation.

40. (New) The electro-optical glazing structure of claim 1, wherein said electro-optical panel comprises:

a first electrically-active cholesteric liquid crystal (CLC) electromagnetic radiation polarizing panel;

a second electrically-active CLC electromagnetic radiation polarizing panel; and

an electrically-passive π-phase retardation panel interposed between said first and second electrically-active CLC electromagnetic radiation polarizing panels.

41. (New) The electro-optical glazing structure of claim 40,

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels totally reflect without absorption electromagnetic radiation having a left hand circularly polarized (LHCP) state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation,

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either a right hand circularly polarized (RHCP) state and/or a wavelength outside said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation; and

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either said LHCP state or said RHCP state and a wavelength within said second prespecified bandwidth when said electro-optical panel is switched to said second optical state of operation.

42. (New) The electro-optical glazing structure of claim 40,

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels totally reflect without absorption electromagnetic radiation having a right hand circularly polarized (RHCP) state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation,

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either a left hand circularly polarized (LHCP) state and/or a wavelength outside said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation; and

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either said LHCP state or said RHCP state and a wavelength within said second prespecified bandwidth when said electro-optical panel is switched to said second optical state of operation.

43. (New) The electro-optical glazing structure of claim 1, wherein said electro-optical panel comprises:

a first electrically-active cholesteric liquid crystal (CLC) electromagnetic radiation polarizing panel; and

a second electrically-active CLC electromagnetic radiation polarizing panel adjacent said first electrically-active CLC electromagnetic radiation polarizing panel.

44. (New) The electro-optical glazing structure of claim 43,

wherein said first electrically-active CLC electromagnetic radiation polarizing panel totally reflects without absorption electromagnetic radiation having a left hand circularly polarized (LHCP) state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation, and

wherein said first electrically-active CLC electromagnetic radiation polarizing panels transmits without absorption electromagnetic radiation having either a right hand circularly polarized (RHCP) state and/or a wavelength outside said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation;

wherein said second electrically-active CLC electromagnetic radiation polarizing panel totally reflects without absorption electromagnetic radiation having said RHCP state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation, and

wherein said second electrically-active CLC electromagnetic radiation polarizing panels transmits without absorption electromagnetic radiation having either said LHCP state and/or a wavelength outside said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation; and

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either said LHCP state or said RHCP state and a wavelength within said second prespecified bandwidth when said electro-optical panel is switched to said second optical state of operation.

45. (New) The electro-optical glazing structure of claim 1, which further comprises:

a window frame for mounting said electro-optical panel within a house or office building, or aboard a transportation vehicle.

46. (New) The electro-optical glazing structure of claim 45, which further comprises:

a electromagnetic-sensor mounted on said window frame, for sensing electromagnetic conditions;

a battery supply mounted within said window frame, for providing electrical power;

a electromagnetic-powered battery recharger mounted within said window frame, for recharging the battery;

electrical circuitry mounted within said window frame, for producing glazing control voltages for switching said first and second optical states of operation; and

a programmable micro-computer chip mounted within said window frame, for controlling the operation of said battery recharger and said electrical circuitry, and the production of said glazing control voltages as required by a radiation flow control program stored within said programmable microcontroller.

47. (New) An intelligent pair of sunglasses, comprising:

a frame; and

a pair of optical element supported within said frame,

wherein each said optical element is realized using said electro-optical glazing structure of claim 1.

48. (New) An intelligent window system for dynamic electromagnetic radiation control which comprises:

a plurality of said electro-optical glazing structures of claim 45, each mounted within a house or office building, or aboard a transportation vehicle; and

a central control computer for coordinating the operation of said electro-optical glazing structures.

49. (New) An composite electro-optical glazing structure which comprises:

a plurality of said electro-optical glazing structures of claim 1, stacked together as a composite electro-optical structure,

wherein said composite electro-optical structure has more than two said optical states of operation which permit complex levels of electromagnetic radiation control.

50. (New) A stereoscopic 3-D viewing device in the form of eyeglasses, comprising:

a pair of optical elements positionable before the eyes of a user of said eyeglasses, each said optical element including said electro-optical glazing structure of claim 1,

whereby said eyeglasses can control electromagnetic radiation during stereoscopic 3-D viewing or monoscopic 2-D viewing of displayed images (i.e. virtual world viewing), or during stereoscopic viewing of real world objects.

51. (New) An electro-optical glazing structure having total-reflection and transparent modes of operation for selectively reflecting and transmitting electromagnetic radiation without absorption, respectively, said electro-optical glazing comprising:

an electro-optical panel of laminated construction, having first and second optical states of operation;

an electrical switching device operably coupled to said electro-optical panel;

wherein electromagnetic radiation within a first prespecified bandwidth falling incident upon said electro-optical panel is totally reflected from said electro-optical panel without absorption when said electro-optical panel is switched to said first optical state of operation, and

wherein electromagnetic radiation within a second prespecified bandwidth falling incident upon said electro-optical panel is transmitted through said electro-optical panel without absorption when said electro-optical panel is switched to said second optical state of operation.

52. (New) The electro-optical glazing structure of claim 51, wherein said first prespecified bandwidth comprises the infrared (IR) portion and ultra-violet (UV) portions of the electromagnetic spectrum, and said second prespecified bandwidth comprises said IR portion, said UV portion and the visible portion of the electromagnetic spectrum.

53. (New) The electro-optical glazing structure of claim 51, wherein said electro-optical panel comprises:

a first electrically-passive cholesteric liquid crystal (CLC) electromagnetic radiation polarizing panel;

a second electrically-passive CLC electromagnetic radiation polarizing panel; and

an electrically-active . π -phase retardation panel interposed between said first and second electrically-passive CLC electromagnetic radiation polarizing panels.

54. (New) The electro-optical glazing structure of claim 53,

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels totally reflect without absorption electromagnetic radiation having a left hand circularly polarized (LHCP) state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation,

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either a right hand circularly polarized (RHCP) state and/or a wavelength outside said first

prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation; and

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either said LHCP state or said RHCP state and a wavelength within said second prespecified bandwidth when said electro-optical panel is switched to said second optical state of operation.

55. (New) The electro-optical glazing structure of claim 53,

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels totally reflect without absorption electromagnetic radiation having a right hand circularly polarized (RHCP) state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation,

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either a left hand circularly polarized (LHCP) state and/or a wavelength outside said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation; and

wherein said first and second electrically-passive CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either said LHCP state or said RHCP state and a wavelength within said second prespecified

bandwidth when said electro-optical panel is switched to said second optical state of operation.

56. (New) The electro-optical glazing structure of claim 51, wherein said electro-optical panel comprises:

a first electrically-active cholesteric liquid crystal (CLC) electromagnetic radiation polarizing panel;

a second electrically-active CLC electromagnetic radiation polarizing panel; and

an electrically-passive π-phase retardation panel interposed between said first and second electrically-active CLC electromagnetic radiation polarizing panels.

57. (New) The electro-optical glazing structure of claim 56,

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels totally reflect without absorption electromagnetic radiation having a left hand circularly polarized (LHCP) state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation,

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either a right hand circularly polarized (RHCP) state and/or a wavelength outside said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation; and

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either said LHCP state or said RHCP state and a wavelength within said second prespecified bandwidth when said electro-optical panel is switched to said second optical state of operation.

58. (New) The electro-optical glazing structure of claim 56,

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels totally reflect without absorption electromagnetic radiation having a right hand circularly polarized (RHCP) state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation,

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either a left hand circularly polarized (LHCP) state and/or a wavelength outside said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation; and

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either said LHCP state or said RHCP state and a wavelength within said second prespecified bandwidth when said electro-optical panel is switched to said second optical state of operation.

59. (New) The electro-optical glazing structure of claim 51, wherein said electro-optical panel comprises:

a first electrically-active cholesteric liquid crystal (CLC) electromagnetic radiation polarizing panel; and

a second electrically-active CLC electromagnetic radiation polarizing panel adjacent said first electrically-active CLC electromagnetic radiation polarizing panel.

60. (New) The electro-optical glazing structure of claim 59,

wherein said first electrically-active CLC electromagnetic radiation polarizing panel totally reflects without absorption electromagnetic radiation having a left hand circularly polarized (LHCP) state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation, and

wherein said first electrically-active CLC electromagnetic radiation polarizing panels transmits without absorption electromagnetic radiation having either a right hand circularly polarized (RHCP) state and/or a wavelength outside said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation;

wherein said second electrically-active CLC electromagnetic radiation polarizing panel totally reflects without absorption electromagnetic radiation having said RHCP state and a wavelength within said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation, and

wherein said second electrically-active CLC electromagnetic radiation polarizing panels transmits without absorption electromagnetic radiation having either said LHCP state and/or a wavelength outside said first prespecified bandwidth when said electro-optical panel is switched to said first optical state of operation; and

wherein said first and second electrically-active CLC electromagnetic radiation polarizing panels transmit without absorption electromagnetic radiation having either said LHCP state or said RHCP state and a wavelength within said second prespecified bandwidth when said electro-optical panel is switched to said second optical state of operation.

61. (New) The electro-optical glazing structure of claim 51, which further comprises:

a window frame for mounting said electro-optical panel within a house or office building, or aboard a transportation vehicle.

62. (New) The electro-optical glazing structure of claim 61, which further comprises:

a electromagnetic-sensor mounted on said window frame, for sensing electromagnetic conditions;

a battery supply mounted within said window frame, for providing electrical power;

a electromagnetic-powered battery recharger mounted within said window frame, for recharging the battery;

electrical circuitry mounted within said window frame, for producing glazing control voltages for switching said first and second optical states of operation; and

a programmable micro-computer chip mounted within said window frame, for controlling the operation of said battery recharger and said electrical circuitry, and the production of said glazing control voltages as required by a radiation flow control program stored within said programmable microcontroller.

63. (New) An intelligent pair of sunglasses, comprising:

a frame; and

a pair of optical element supported within said frame,

wherein each said optical element is realized using said electro-optical glazing structure of claim 51.

64. (New) An intelligent window system for dynamic electromagnetic radiation control which comprises:

a plurality of said electro-optical glazing structures of claim 61, each mounted within a house or office building, or aboard a transportation vehicle; and

a central control computer for coordinating the operation of said electro-optical glazing structures.

65. (New) An composite electro-optical glazing structure which comprises:

a plurality of said electro-optical glazing structures of claim 51, stacked together as a composite electro-optical structure,

wherein said composite electro-optical structure has more than two said optical states of operation which permit complex levels of electromagnetic radiation control.

66. (New) A stereoscopic 3-D viewing device in the form of eyeglasses, comprising:

a pair of optical elements positionable before the eyes of a user of said eyeglasses, each said optical element including said electro-optical glazing structure of claim 51,

whereby said eyeglasses can control electromagnetic radiation during stereoscopic 3-D viewing or monoscopic 2-D viewing of displayed images (i.e. virtual world viewing), or during stereoscopic viewing of real world objects.